



Southwest Florida Research and Education Center

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Southwest Florida Research and Education Foundation Achievements

The UF/IFAS Southwest Florida Research and Education Center has a rich history of serving not only Southwest Florida growers but of initiating new research and production programs that have advanced agriculture throughout the state of Florida. Here is just a short list of some notable achievements.

Beginning in 1958 with the appointment of Dr Paul Everett to what was then known as the South Florida Field Laboratory, an extensive research program on vegetable production problems was initiated, pioneering the way for the development of the modern vegetable industry in SW Florida. The principal crops under investigation were watermelons, tomatoes, cucumbers, sweet peppers, and cantaloupes. Areas of research included identifying plant nutritional requirements, variety trials and the management of plant diseases, insects, and weeds. The program also established the widespread use of plastic mulch and drip irrigation in vegetable production.

Research at SWFREC also helped lay the groundwork for the rapid expansion of citrus on the flatwood soils of SW Florida following the freezes of the 80's which pushed the citrus industry south.

In the 1990's, research at SWFREC furnished tomato growers with methods for managing the silverleaf whitefly and the Gemini virus that threatened the tomato industry.

Early work by Dr Bob Rouse and Dr Phil Stansly with Maury Boyd and area citrus growers developed strategies of modified citrus fertilization schedules, foliar nutrition, psyllid management and mixtures of nutritional compounds and chemicals that stimulate "systemic acquired resistance (SAR)," or a natural defense to mitigate the effects of citrus greening – (prior to the UF recommended destruction of infected trees); this approach is now standard practice among growers.

The Florida Master Naturalist Program initiated by Dr Marty Main at SWFREC is now statewide and has educated 10's of thousands of Floridians about Florida's unique ecology and natural systems.

The Farm Labor Supervisor Training Program helps growers and farm labor supervisors understand and navigate the myriad of regulations governing farm labor and how to comply with these regulations and avoid penalties and bad publicity. In 2020, the Farm Labor Contractor Program conducted a series of virtual Covid- awareness programs which offered COVID-19 safety training and access to testing resources for approximately 800 growers and farm labor contractors across the state.

Dr Pam Roberts, working with a team of researchers and extension agents, was the first to detect and characterize a new whitefly transmitted cucurbit virus in 2004 which resulted in devastating losses. It took more than a year to diagnose and identify the cause of “watermelon vine decline” as being caused by the whitefly transmitted squash vein yellowing virus. Subsequent research developed management strategies that allow growers to successfully produce watermelons with minimal losses from the virus.

Since this, Dr Roberts has worked to provide management options for several new whitefly transmitted viruses in watermelon and other cucurbits, including cucurbit crumple leaf virus and cucurbit yellow stunting disorder virus. Dr Roberts recently identified two new watermelon viruses - watermelon crinkle leaf-associate virus 1 and 2 and is currently trying to determine possible vectors.

Using Artificial Intelligence (AI) and Technology to make agriculture more efficient and reduce use of labor, Dr Ampatzidis and Dr Kanissery – development of a “smart sprayer” which can detect various types of weed and apply mixtures of herbicides only on the weeds while avoiding the crop plants – this system uses only 10% of the herbicides used by broadcast applications, reducing grower costs and environmental impacts.

Dr Ampatzidis and Dr Roberts are working on a drone-based platform that can provide early detection of vegetable diseases before they can be diagnosed by human eyes. These projects provide just a sample of how AI and technology will revolutionize agriculture in the future.

Dr Batuman made the first detection of the new tomato brown rugose virus in Florida – fortunately only in imported fruit being offered for sale – but this helped lead to greater scrutiny of imports coming into the US.

More recently, Dr Sanjay Shukla introduced the concept of compact bed geometry design for vegetable and melons for reducing costs and risks and enhancing environmental sustainability. He also pioneered the concept of Payment for Water Storage and Treatment Services (Water Farming).

Dr Morgan and more recently Dr Shukla coordinated efforts to update IFAS phosphorus recommendations for potato and tomato.

The Pest and Disease Diagnostic Clinic at SWFREC continues to be highly valued and relied upon by growers and industry reps around the region.

Next year, the ag economics program Risk Less, Grow Smart: Economic Problem-Solving in Agriculture will launch a certification program.

SWFREC continues to provide student education and training across multiple disciplines – creating the next generation of researchers and industry leaders.

Simply put, if you are engaged in agriculture, you cannot afford not to support the Southwest Florida Research and Education Center through your contribution to the SWFRE Foundation